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(12) **United States Patent**
Nakami et al.(10) **Patent No.: US 6,510,254 B1**
(45) **Date of Patent: Jan. 21, 2003**(54) **APPARATUS AND METHOD FOR IMAGE DATA INTERPOLATION AND MEDIUM ON WHICH IMAGE DATA INTERPOLATION PROGRAM IS RECORDED**(75) **Inventors:** Yoshihiro Nakami, Nagano (JP); Naoki Kuwata, Nagano (JP)(73) **Assignee:** Seiko Epson Corporation, Tokyo (JP)(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.(21) **Appl. No.:** 09/274,981(22) **Filed:** Mar. 23, 1999(30) **Foreign Application Priority Data**

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(51) **Int. Cl.⁷** G06K 9/32; H04N 1/46(52) **U.S. Cl.** 382/300; 358/525(58) **Field of Search** 382/298, 299, 382/300, 173, 254; 358/428, 525, 1.2, 528; 345/132, 606, 607, 608, 609, 660(56) **References Cited****U.S. PATENT DOCUMENTS**

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An image data interpolation apparatus includes an image data obtaining unit for obtaining image data representing an image as dot-matrix picture elements, a picture element interpolating unit capable of selectively executing one of a plurality of interpolating processes when the image data is interpolated so that the number of constituent picture elements thereof is increased, an interpolating scale factor obtaining unit for obtaining an interpolating scale factor suitable for the image data, and an interpolating process selecting unit for selecting one of the interpolating processes capable of obtaining an optimum result of interpolation according to the interpolating scale factor obtained by the interpolating scale factor obtaining unit and causing the picture element interpolating unit to execute the selected interpolating process.

9 Claims, 35 Drawing Sheets